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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,375	09/03/2003	Kyong-Mo Bang	TESSERA 3.0-326	4192
38091	7590	03/08/2006	EXAMINER	
TESSERA LERNER DAVID et al. 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090			NGUYEN, DONGHAI D	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/654,375	Applicant(s) BANG ET AL.	
	Examiner Donghai D. Nguyen	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
 4a) Of the above claim(s) 2-8,33-37 and 40-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,9-32,38 and 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/17/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Species B, Claims 9-13 and 17-23 in the reply filed on 23 January 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Thus claims 2-8, 33-37 and 40-42 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention (Species A and C), there being no allowable generic or linking claim.

The examination of elected claims 1, 9-32, 38 and 39 as follow:

Information Disclosure Statement

2. The information disclosure statement filed 17 February 2004 is objected to because the references "AT and "AU" are not matured into patents yet. They should be listed in under section Non-patent documents in stead. Further reference "AR" has the document number that does not matched to the publication date and inventor name.

Drawings

3. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because characters of lines, numbers and letters are not uniformly thick, well defined, clean, and black (poor line quality). Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to

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avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) The invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1, 14, 26-31, 38 and 39 are rejected under 35 U.S.C. 102(a) as being anticipated by US Patent 6,426,240 to Isaak.

Regarding claim 1, Isaak discloses a method of making a microelectronic package, comprising: folding a substrate (14/26) for accepting a microelectronic element (56) in a first portion (center portion), said substrate a having at least one folding portion (sides portions), said folding including engaging the substrate with a die (96) having an engagement surface (see Figs. 16a-e) so that said at least one folding portion of said substrate pivots with respect to said first portion about an axis between said first portion and said folding portion (see Figs. 3-4).

Regarding claim 14, Isaak discloses the substrate comprises mounting terminals (42) and connection terminals (72/74).

Regarding claims 26-27, Isaak discloses the substrate (14/26) comprises a dielectric layer with a plurality of traces (18/40) connected to a plurality of connection pads (42, see Fig. 4) to said connection terminals (72/74) and at least some of said plurality of traces extend from said plurality of connection pads to said mounting terminals (38 See Fig. 6)

Regarding claims 28-29, Isaak discloses at least some of said plurality of traces extends from said connection terminals (72/74) to said mounting terminals (38) and said plurality of connection pads (42) are connected to a plurality of contacts of said microelectronic element (see Fig. 6).

Regarding claims 30-31, Isaak discloses an adhesive layer (48) on said substrate, the adhesive layer having apertures and attaching said adhesive layer with said dielectric layer so that said plurality of connection pads are aligned with said apertures (see Fig. 12) and attaching said microelectronic element (56) having a plurality of contacts to said adhesive layer so that said microelectronic element is disposed in said first portion and said plurality of contacts face away from said adhesive layer.

Regarding claims 38-39, Isaak discloses the engagement surface of said die (6) is shaped and size so as to correspond to a final desired shape and size for the microelectronic package (see Figs. 16a-e).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 9-32, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,300,678 to Mukerji et al in view of Isaak.

Regarding claims 1 and 38-39, Mukerji et al disclose a method of making a microelectronic package (300/400/500), comprising: folding a substrate (120/401/510) for accepting a microelectronic element (341/502) in a first portion (121 see Fig. 1), said substrate a having at least one folding portion (123), so that said at least one folding portion of said substrate pivots with respect to said first portion about an axis between said first portion and said folding portion (see Figs. 3-5). Mukerji et al do not teach engaging the substrate with a die having an engagement surface the substrate. Isaak teach engaging the substrate (14/26) with a die (96) having an engagement surface and desired shaped and size (see Figs. 16a-e) for wrapping the portion of the substrate over the others portion to form a package having the desired configuration. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was make to modify the invention of Mukerji et al by utilize the die as taught by Isaak for folding the portion of the substrate over the others portion in order to obtain a desired folding microelectronic package having the desired configuration.

Regarding claims 9 and 10, Mukerji et al disclose the substrate (120) carries a microelectronic element (341) at a first end (121) of said substrate and said folding portion comprises a second end (122), said second end of said substrate being opposite said first end (see Figs. 1-3). Note that before said step of folding, said substrate having the second end extends horizontally away from said microelectronic element on one side.

Regarding claim 11, Isaak teach the die (96) advances toward said microelectronic element so that said second end follows said engagement surface and travels back over said microelectronic element as said die advances (see Figs. 16a-e of Isaak's reference) as taught in claim 1 above.

Regarding claims 12-13, Mukerji et al disclose after said step of folding, said second end is disposed on an upper side of the package (see Fig. 3) and the substrate has connection terminals at said second end and further comprising attaching a microelectronic part to said connection terminals (see Fig. 5).

Regarding claim 14, Mukerji et al disclose the substrate (120/401/510) comprises mounting terminals (for mounting IC 431) and connection terminals (201 see Fig. 3).

Regarding claim 15, Mukerji et al disclose the mounting terminals are formed in a mounting portion (121) of said substrate for mounting the microelectronic package (431) with other elements and said connection terminals are formed in said folding portion of said substrate (see Figs. 1, 3 and 5).

Regarding claim 16, Figs. 2 and 3 of Mukerji show the mounting portion (122) is coextensive with said first portion (121).

Regarding claim 17, the substrate carries a microelectronic element (431) in said first portion of said substrate (121).

Regarding claim 18, Isaak teaches the substrate is engaged by said die (96) so that said substrate moves into a position overlying said microelectronic element (see Figs. 16a-e of Isaak's reference) as taught in claim 1 above.

Regarding claims 19-21, Mukerji et al disclose the substrate includes mounting terminals and connection terminals exposed at an external surface of said substrate and folding is performed so that said external surface in said folding portion faces upwardly, at an upper end of the microelectronic package which connected to connection terminals (see Figs. 3 and 5).

Regarding the limitation of claims 22-23, Mukerji et al Fig. 5

Regarding claims 24-25, Mukerji et al disclose the substrate (120/401,510) includes an internal surface for attaching the microelectronic element (341 see Fig. 3).

Regarding claims 26-29, Mukerji et al disclose the substrate (120/401/510) comprises a dielectric layer with a plurality of traces (125-127) connected to a plurality of connection pads (42, see Fig. 4) to said connection terminals (201) and at least some of said plurality of traces (125-127) extend from said plurality of connection pads to said mounting terminals (Figs. 1-6).

Regarding claims 30-31, Mukerji et al disclose the adhesive (713) on the substrate, except that the adhesive layer does not have apertures. Isaak teaches an adhesive layer (48) on said substrate and the adhesive layer having apertures (see Fig. 12) for adhering the second portion of the substrate over the others (see Figs.6-8). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the substrate of Mukerji et al by having the adhesive layer with apertures thereon attaching to the substrate as taught by Isaak for adhering the second portion of the substrate over the others in the process of folding the substrate.

Regarding claim 32, Mukerji/Isaak do not teach attaching bonding wires to the plurality of contacts and to the plurality of connection pads. It would have been obvious to one having ordinary skill in the art at the time the invention was made to attaching the plurality of contacts and to said plurality of connection pads by bonding wires since it was well know in the art that using bonding wires to connect between terminals (see reference 5,448,511 as evident).

The limitations of claims 38-39 also met as set for detail in claim 1 above.

Conclusion


8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art references cited for their teachings of folding the substrate to form an assembly package.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghai D. Nguyen whose telephone number is (571)-272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571)-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN
February 28, 2006


MINH TRINH
PRIMARY EXAMINER